REMARKS

In accordance with the foregoing, no new matter is being presented, and approval and entry are respectfully requested.

Claims 1-9 and 16-26 are pending and under consideration with claims 1, 7, and 17-26 being independent. Claims 10-15 were withdrawn from consideration in response to an election of species requirement. Claims 1-9 stand rejected. Claims 1 and 7 have been amended, claims 3-6 have been canceled, and claims 16-26 have been added.

Rejections under 35 USC § 102

In the Office Action at page 3, the Examiner rejected claims 1-9 under 35 U.S.C. § 102 as anticipated by Hansen (U.S. Patent No. 6,323,993). The Examiner stated that Hansen, at col. 3, discloses the elements of Applicant's invention.

Applicant's amended claim 1 recites a method that includes "selecting a quality measure that obtains a quality measurement of said output signal light from one of: a Q factor; a bit error rate; a spectrum shape, and; an eye opening..."

As noted by the Examiner, Hansen describes a method that includes measuring the quality of the output signal. Hansen at col. 3, line 60 to col. 4 line 12. However, Hansen does not describe selecting a quality measure that obtains a quality measurement of said output signal light from one of a Q factor, a bit error rate, a spectrum shape, or an eye opening, as recited in independent claim 1. It is respectfully requested that claim 1, and claim 2, which depends from claim 1, be allowed.

Independent claim 7 recites a device that includes a method to select a quality measure of the output signal with somewhat similar language to Independent claim 1. For the reasons above with respect to claim 1, it is respectfully requested that claim 7, and claims 8-9 and 16, which depend from claim 7, be allowed.

In the Office Action at pages 2-3, the Examiner rejected claims 1-2 and 7-9 under 35 U.S.C. § 102(a) as anticipated by Watanabe (U.S. Publication No. 2001/0021288). The Examiner stated that figure 8 and page 4, paragraph 64 of Watanabe disclose the claim elements of Applicant's invention. This rejection is respectfully traversed and reconsideration is

requested.

Watanabe was filed on February 15, 2001, and published on September 13, 2001. Applicant's Application claims priority to Japanese Application Number 2000-201984, which was filed on July 4, 2000. Thus, Watanabe cannot be an anticipating reference. We will file a certified copy of Japanese Application Number 2000-201984 when this document is available.

Moreover, even assuming that Watanabe was a valid reference, for the same reasons above with respect to Hansen, Watanabe does not anticipate Applicant's invention. As alleged by the Examiner, Watanabe shapes the waveform (fig. 8, #8), monitors the power of the output signal (fig. 8, #26), and controls the power of the input signal (fig. 8, #20). However, Watanabe does not describe selecting a quality measure that obtains a quality measurement of said output signal light from one of a Q factor, a bit error rate, a spectrum shape, or an eye opening, as recited in independent claim 1. It is respectfully requested that claim 1, and claim 2, which depends from claim 1, be allowed.

Independent claim 7 recites a device that includes a method of selecting a quality measure of the output signal with somewhat similar language to that of Independent claim 1. For the reasons above with respect to claim 1, it is respectfully requested that claims 7, 8-9, and 16, which depend from claim 7, be allowed.

Independent claims 17-20 recite methods of controlling the power of an input signal light to optimize a Q factor, a bit error rate, a spectrum shape, and an eye opening of an output signal, respectively. Hansen does not describe controlling an input power by optimizing the Q factor, or by optimizing a bit error rate, a spectrum shape, or an eye opening, as recited in independent claims 17-20. Thus, it is respectfully requested that claims 17-20 be allowed.

For the same reasons as noted above with respect to Hansen, Watanabe, even if it was considered a valid reference, does not anticipate independent claims 17-20.

Independent claim 21 recites an optical repeater that includes an attenuator that attenuates an input signal (second signal) in order to optimize a measured quality of an output signal. Hansen does not anticipate for the same reasons explained above with respect to claim 1. In addition, Hansen does not describe an optical repeater that includes an attenuator to control an input signal. For the same reasons, Watanabe, even if assumed to be a valid reference, does not anticipate claim 21. Thus, it is respectfully requested that claim 21 be allowed.

Independent claim 22 recites an optical repeater that includes a means to attenuate an input signal (second signal) in order to optimize a measured quality of an output signal. Hansen does not anticipate for the same reasons explained above with respect to claim 21. For the same reasons, Watanabe, even if assumed to be a valid reference, does not anticipate claim 22. Thus, it is respectfully requested that claim 22 be allowed.

Independent claims 23-26 recite means for controlling the power of an input signal light to optimize a Q factor, a bit error rate, a spectrum shape, and an eye opening of an output signal, respectively. Hansen does not describe means for controlling an input power by optimizing the Q factor, or by optimizing a bit error rate, a spectrum shape, or an eye opening, as recited in independent claims 23-26. Thus, it is respectfully requested that claims 23-26 be allowed. For the same reasons as noted above with respect to Hansen, Watanabe, even if it was considered a valid reference, does not anticipate independent claims 23-26.

Rejection under 35 USC § 103

In the Office Action at pages 3-5, the Examiner rejected claims 3-6 under 35 U.S.C. § 103 as obvious over Watanabe in view of Hansen. As mentioned above, Watanabe cannot be an anticipating reference and thus cannot be combined with another reference for the purposes of an obviousness rejection.

Moreover, claims 3-6 have been cancelled. Finally, neither Watanabe or Hansen, either alone or together, suggest or describe selecting a quality measure that obtains a quality measurement of said output signal light from one of a Q factor, a bit error rate, a spectrum shape, or an eye opening, as recited in independent claim 1.

It is respectfully requested that the objection be withdrawn.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: 12/9/02

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CERTIFICATE UNDER 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231

on December 9, 2002

STAAS & HALSEY

By: Andrea G. Robertson

Date: 12/9/02

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please AMEND the following claims:

1. (Amended) A method comprising [the steps of]:

[providing a waveform shaper for waveform] shaping a waveform of an input signal light [and outputting] to produce a shaped output signal light;

selecting a [measuring the] quality measure that obtains a quality measurement of said output signal light from one of:

a Q factor;

a bit error rate;

a spectrum shape; or

an eye opening; and

controlling the power of said input signal light so that said quality [measured]measurement is improved.

2. (Amended) A method according to claim 1, wherein said controlling [step] comprises [the steps of] providing an optical amplifier [for] amplifying said input signal light, and adjusting the gain of said optical amplifier.

7. (Amended) A device comprising:

a waveform shaper [for waveform] shaping a waveform of an input signal light [and outputting] to produce a shaped output signal light;

[means for measuring the]a quality selection module that obtains a quality measurement of said output signal light from one of:

a Q factor;

a bit error rate;

a spectrum shape; or

an eye opening; and

a power controller [for] controlling the power of said input signal light so that said quality [measured]measurement is improved.

8. (Amended) A device according to claim 7, wherein said power controller

comprises an optical amplifier [for] amplifying said input signal light and a controller [for] adjusting the gain of said optical amplifier so that said quality measurement is most improved.

9. (Amended) A device according to claim 7, wherein said power controller comprises an optical amplifier [for] amplifying said input signal light, an optical attenuator [for] attenuating an output from said optical amplifier, and a controller [for] adjusting the attenuation of said optical attenuator so that said quality measurement is most improved.

Please add the following new claims:

16. (New) The method of claim 1, wherein the input signal is a wavelength division multiplexed signal.

17. (New) A method comprising:
shaping a waveform of an input signal light to produce a shaped output signal light;
measuring a Q factor of said output signal light; and
controlling the power of said input signal light to optimize the measured Q factor.

18. (New) A method comprising:
shaping a waveform of an input signal light to produce a shaped output signal light;
measuring a bit error rate of said output signal light; and
controlling the power of said input signal light to optimize the measured bit error rate.

19. (New) A method comprising:
shaping a waveform of an input signal light to produce a shaped output signal light;
measuring a spectrum shape of said output signal light; and
controlling the power of said input signal light to optimize the measured spectrum shape.

20. (New) A method comprising:
producing a shaped output signal from an input signal;
measuring an eye opening of said output signal light; and

controlling the power of said input signal light to optimize the measured eye opening.

21. (New) An optical repeater comprising:

an amplifier that amplifies a first signal to produce a second signal;

an attenuator that attenuates the second signal to produce a third signal;

an optical regenerator that shapes a waveform of the third signal to produce a fourth signal;

a quality monitor that measures a quality of the fourth signal; and

a controller that controls the attenuator to change a power level of the second signal and thereby optimize the measured quality of the fourth signal.

22. (New) A device comprising:

means for amplifying a first signal to produce a second signal;

means for attenuating the second signal to produce a third signal;

means for shaping a waveform of the third signal to produce a fourth signal;

means for monitoring a quality of the fourth signal; and

means for controlling the attenuation to change a power level of the second signal and thereby optimize the quality measure of the fourth signal.

23. (New) An apparatus comprising:

means for shaping a waveform of an input signal light to produce a shaped output signal light;

means for measuring a Q factor of said output signal light; and

means for controlling the power of said input signal light to optimize the measured Q factor.

24. (New) An apparatus comprising:

means for shaping a waveform of an input signal light to produce a shaped output signal light;

means for measuring a bit error rate of said output signal light; and

means for controlling the power of said input signal light to optimize the measured bit error rate.

25. (New) A method comprising:

means for shaping a waveform of an input signal light to produce a shaped output signal light;

means for measuring a spectrum shape of said output signal light; and

means for controlling the power of said input signal light to optimize the measured spectrum shape.

26. (New) An apparatus comprising:

means for producing a shaped output signal from an input signal;

means for measuring an eye opening of said output signal light; and

means for controlling the power of said input signal light to optimize the measured eye opening.